



Owner/Operator Manual

GTX Garden Tractor

Models

GTX 18 (Model 13060)

GTX 20 (Model 13062)

- **Safety**
- **Assembly**
- **Operation**
- **Maintenance**

Thank you for purchasing this product. We feel you now own one of the finest pieces of outdoor power equipment available.

All information in this manual is based on the latest product information available at the time of printing.

This manual is considered a permanent part of this unit and must stay with the unit if resold. A replacement manual can be obtained from the factory, free of charge.

This is a safety, operation and general maintenance manual which does not attempt to cover major repairs.

Our equipment is carefully designed, engineered and manufactured for excellent performance if properly operated and maintained.

Read this manual to familiarize yourself with the unit, its features and operation.

Our products have passed rigid safety standards of the Outdoor Power Equipment Institute and an independent testing laboratory.

The unit's warranty statement is included on the back cover of this manual. Read it carefully. Also, please complete and return the postpaid owner registration card which is included with this manual. The purpose of this card is to register each unit and owner at the factory in order to provide informational bulletins and safety literature.

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Unit Service and Repair

To service your unit, contact your authorized dealer. Do not return parts directly to the factory. Provide your dealer with the unit's model/serial number and the part's description.

Left and Right Sides

Left and right sides of this unit are determined from the operator's position, facing the direction of forward travel.

Replacement Owner/Operator Manual

A replacement Owner/Operator Manual is available for free. To order, write to the address on the back cover of this manual.

Warranty Service

The warranty for this unit is printed on the back cover of this manual.

Engine Service

For engine service, contact an authorized engine dealer. To locate an authorized engine dealer, refer to the "Yellow Pages" under "Engines—Gasoline" or Gasoline — Engines". Provide the dealer with the engine model and serial numbers.

Repair Manual

A repair manual is available from your dealer.



Warning to all operators in California and other applicable states.



Under California law, and under the laws of several other states, it is not lawful to operate an internal combustion engine using hydrocarbon fuels on any forest covered, brush covered, or grass covered land, or on land covered with grain, hay, or other flammable agricultural crop, without an engine spark arrester in continuous effective working order.

The engine on this unit, like most outdoor power equipment, is an internal combustion engine that burns gasoline, a hydrocarbon fuel. Therefore, this unit must be equipped with a spark arrester muffler in continuous effective working order. The spark arrester must be attached to the engine exhaust system in such a manner that flames or heat from the system will not ignite flammable material. Failure of the owner/operator of this unit to comply with this regulation is a misdemeanor under California law, and may also be a violation of other state and/or federal regulations, laws, ordinances, or codes. Contact the local fire marshal or forest service for specific information about which regulations apply in your area.

Identification Numbers

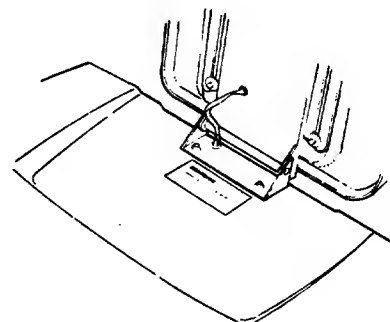
For prompt service, provide the authorized dealer with the identification numbers for the unit. Fill in the spaces below with the identification numbers for future reference.

Date of Purchase:

Unit Serial Number:

Transmission Model/Serial Number:

Engine Model/Serial/Spec. Numbers:



Section 1

Safety

Important!

Safe Operating Practices for This Unit



This is a safety alert symbol. It is used in this manual and on the unit's decals to alert you to potential hazards. Whenever you see this symbol, read and obey the safety message that follows it. Failure to obey the safety message could result in personal injury or property damage.

INTRODUCTION

1. **Unit is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.**
2. Serious accidents which may cause injury or property damage can occur if the following safety guidelines are not followed. Operator is solely responsible for accidents or hazards that occur when using unit. Preventing accidents is the responsibility of every equipment operator. Accidents can be prevented. Be careful before, during and immediately after use of any powered equipment. The following general safety precautions must be fully understood and followed during operation: Review these instructions frequently and never take chances. If you do not understand any part of this manual or need assistance, contact your dealer or our service department.

TRAINING



1. **Read, understand and follow all instructions in this manual and on unit before starting.** A free replacement manual is available from the factory. To order a replacement manual, contact the factory at the address indicated in this manual. Provide the model/serial number of unit when ordering.
2. Read and understand the operator's manual provided with each attachment used with this unit.
3. Read the engine operation and maintenance manual provided with this unit before operation. Read and follow all safety instructions provided in that manual.
4. Only allow responsible adults, who are familiar with the instructions, to operate the unit.

5. Know the location and function of all controls before operating unit. Know how to stop engine and attachments quickly in case of emergency. Familiarize yourself with all safety and operation decals on unit and attachments. If these decals are damaged or not legible, clean or replace them as needed.

PREPARATION

1. Wear proper clothing when operating unit. Always wear sturdy footwear (preferably steel-toed shoes) and hearing protection during operation.
 - a. Wear heavy leather gloves whenever working near or servicing any cutting edges on unit.
 - b. Do not wear loose-fitting clothing, jewelry, scarves, ties, etc., which may get caught in moving parts. Tie up or restrain long hair.
 - c. Do not operate unit while barefoot. Do not wear sandals.
 - d. Wear long trousers.
 - e. Wear hearing protection.
2. Do not operate unit when tired, ill or under the influence of alcohol and/or other drugs.
3. Be prepared for an emergency. Keep a first aid kit and fire extinguisher handy. Keep emergency telephone numbers for ambulance, fire, hospital, doctor and rescue near your telephone.

BEFORE OPERATION



1. Before each use, clear work area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by unit or attachments.
2. Keep unit in safe operating condition. Check the following each time before starting unit:
 - a. All hardware for tightness (especially blade mounting hardware—check for proper torque specifications frequently in this area—refer to maintenance section of attachment owners manual).
 - b. Brakes, steering and other major controls for proper operation.
 - c. Inspect mower blades for wear or damage. Broken pieces thrown from a worn or damaged blade can cause serious injury.
 - d. Check for and maintain correct tire pressure. Check tires for cuts or bubbles. Check wheels for damage or missing hardware. Repair or replace as required.
 - e. Check engine oil level and add oil as required. If oil level is below "ADD" mark, DO NOT run engine.
3. Do not operate unit or attachments without safety devices and shields in place and operating properly.
4. Only use attachments which are approved for use with this unit. Contact our service department if there is a question whether an attachment is approved for unit.
5. Locking collar of shaft-driven attachments must lock completely and properly into place at retaining groove of tractor attachment/PTO driveshaft. Before installing or operating attachment(s), see attachment owner/operator manual.
6. When using attachments, use wheel weights (where required) for extra traction and proper balance.
7. Check brake function frequently. Adjust and service as required. See "Brake Adjustment" in the "Maintenance" section of your owner/operator manual.
8. Unit is equipped with a safety interlock system, designed to shut off engine when operator leaves seat while an attachment is running or if parking brake is not engaged. If the interlock system is not working properly, repair it before operating this unit.

CORRECT ANY MALFUNCTION BEFORE USING THIS UNIT OR ATTACHMENTS!

HANDLING GASOLINE



1. Use extra care in handling gasoline and other fuels. Gasoline and its vapors are volatile and dangerous. Keep gasoline and gasoline containers away from hot engine exhaust. Never allow flame, sparks, smoking materials or other hot objects near gasoline or gasoline fumes.
2. Wipe up spilled gasoline immediately. Only use approved gasoline containers.
3. Leave two inches of air space at top of fuel tank to allow room for expansion.
4. Store gasoline in a cool, well-ventilated area. Never store unit or fuel container inside where there is an open flame, such as a hot water heater, furnace, etc.
5. Never remove fuel fill cap, or add fuel to fuel tank, if engine is running or hot. Always replace fuel fill cap before starting engine.
6. Never refuel unit indoors. Refuel outdoors in a well-ventilated area.

OPERATION

1. When starting engine:
 - a. Disengage attachment/PTO (Power Take-Off) drive.
 - b. Set parking brake.
 - c. Place transmission into Neutral position.
2. Remain seated when starting engine and during operation. Operate unit with feet flat on running boards at all times.



3. Keep hands, feet, face, hair and clothing away from rotating parts. Stop engine before removing grass catcher or unclogging chute.
4. When operating a mower deck:
 - a. Mow only in daylight or in good artificial light.
 - b. Never dismount to make a cutting height adjustment while the engine is running.
 - c. Disengage attachment/PTO drive, shut off engine, remove ignition key and wait for all moving parts to stop before unclogging discharge chute, mounting grass catcher or Grass Reduction System (GRS).

Safety (continued)

5. Disengage attachment/PTO drive when transporting unit to work area or when attachments are not in use.
6. Be aware of attachment discharge direction and do not point it at anyone. Do not operate mower decks without either the entire grass catcher or the guard in place.
7. If you strike a foreign object, disengage attachment/PTO drive, shut off engine, wait for all moving parts to come to a stop and remove ignition key. Inspect for and repair any damage before operating equipment again.
8. Never carry passengers. Passengers interfere with the safe operation of this unit. Passengers could be struck by foreign objects and/or thrown from unit and could be severely injured.
9. Be sure area is clear of other people before mowing. Stop machine if anyone enters the area. Do not operate unit with children, pets or others nearby.
10. As a general rule, do not mow in reverse. Disengage power to mower attachments before backing up. If it is absolutely necessary to back up:
 - a. Check area on ground directly behind unit.
 - b. Continue to observe area down and to rear while backing up.
11. Approach blind corners cautiously.
12. Always observe the terrain. Watch for and avoid obstacles. Stay away from holes, ditches, soft or steep embankments and other potentially dangerous terrain. Tall grass can hide obstacles.
13. Wet surfaces reduce traction and stability. Always maintain proper traction. Grip the steering wheel firmly.
14. Slow down before turning.

15. Do not install an automotive-type ball hitch on this unit. When pulling loads:
 - a. Use approved hitch points.
 - b. Limit loads to those which can be safely controlled.
16. Watch out for traffic when operating near or crossing roadways.
17. Never leave a running machine unattended. Always turn off attachment/PTO drive, set parking brake, stop engine and remove key before dismounting.

CHILDREN



1. Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.
2. Never allow children to operate this unit, even under adult supervision. Local regulations may restrict operator age. Only allow responsible adults, who are familiar with these instructions, to operate this unit.
3. Never carry children as passengers. Do not carry ANY passengers. They may fall off and be seriously injured or interfere with safe machine operation.
4. Keep children out of the work area and under the watchful care of another responsible adult.
5. Be alert and turn machine off if children enter the area.
6. Before and when backing, look behind and down for children.

7. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.
8. Keep children away while performing maintenance or adjustments.

SLOPE OPERATION



1. Slopes are a major factor in loss-of-control and tip-over accidents which can result in severe injury or death. All slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not operate this unit on the slope.
2. Remove obstacles such as rocks, tree limbs, etc. before operation
3. Watch for holes, ruts, or bumps. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
4. Always mow up and down the face of slopes, never across. Do not mow near dropoffs, ditches or embankments. The unit could suddenly overturn if a wheel goes over the edge of a cliff or ditch, or if an edge caves in.
5. When using attachments on slopes, use wheel weights, as instructed for extra traction and correct balance.
6. Do not turn on slopes unless necessary, and then, turn off attachment/PTO drive and turn slowly and gradually downhill.

7. Do not start or stop suddenly when going up or down a slope. Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction. If the unit has a gear drive transmission, choose a low gear so that you will not have to stop or shift while on the slope.
8. If unit is unable to continue moving uphill, disengage attachment/PTO drive, check area on ground immediately behind unit, watch area to rear and proceed backward slowly.
9. Do not operate unit on steep slopes where there is a risk of an overturn. **Do not mow slopes with an incline of more than 10°.**
10. Use extra care with grass catchers or other attachments. These can change the stability of unit.
11. Do not operate unit on wet grass. Reduced traction could cause sliding.
12. Do not try to stabilize unit by putting your foot to the ground.
13. Do not park unit on a hill.

STOPPING

1. Before leaving operator's position or before leaving tractor unattended:
 - a. Bring unit to a complete stop.
 - b. Disengage attachment/PTO drive.
 - c. Lower attachments to ground.
 - d. Set parking brake.
 - e. Shut off engine and remove ignition key.
 - f. Wait for all moving parts to come to a complete stop.
2. Disengage attachment/PTO drive when transporting tractor or when attachments are not in use.

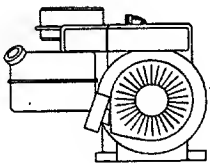
MAINTENANCE

1. Before performing any service, adjustments or maintenance on unit, engine or attachments:
 - a. Park unit on a firm and level surface.
 - b. Disengage attachment/PTO drive.
 - c. Lower attachments.
 - d. Move all controls to "Neutral".
 - e. Apply parking brake.
 - f. Shut off engine. Remove ignition key and allow engine to cool.
2. Always wear sturdy footwear (preferably steel-toed shoes), long trousers, hearing and eye protection while doing any maintenance on unit. Do not wear loose-fitting clothing, jewelry, scarves, ties, etc., which could get caught in moving parts. Tie up or restrain long hair.
3. Mower blades are extremely sharp. Use caution when servicing. Wear gloves or wrap blades in rags. Wear eye protection when sharpening blades.
4. Keep children away while performing maintenance or adjustments.
5. Provide safe, adequate light in your work area. **NEVER USE AN OPEN FLAME FOR ILLUMINATION!** Use only a portable safety light enclosed in a wire cage for working inside or under unit. **NOTE: Hot filaments from a broken light bulb can ignite spilled fuel or oil.**
6. Keep nuts and bolts tight (especially blade mounting hardware—check for proper torque specifications frequently in this area—refer to maintenance section of attachment owner/operator manual). Keep equipment in good condition.
7. Never tamper with safety devices. Check their proper operation regularly. Repair or replace as necessary.
8. Keep machine free of grass, leaves and debris build-up. Clean up oil or fuel spills. Allow machine to cool before storing.
9. Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. Check their proper operation regularly. Repair or replace as necessary.
10. Frequently check components and replace when necessary. Use only factory-approved replacement parts. Parts manufactured by others may present safety hazards even though they may fit on the unit.
11. Replace muffler if worn or defective.
12. Keep all safety and operation decals in place. If these decals are damaged or not legible, clean or replace them as needed.
13. Check brake operation frequently. Adjust and service as necessary as indicated in Section 6 "Maintenance".
14. Chock wheels (place blocks of wood on both sides of wheels) when performing maintenance with the parking brake off. Securely support unit if it must be raised for any reason.
15. Check wheel attachment hardware regularly and ensure it is properly secured.
16. Do not attempt to mount a tire on a wheel rim unless you are experienced in doing so. Follow proper safety precautions and use proper tools. Mounting a wheel improperly could result in serious injury or death.
17. Do not inflate tires above recommended pressures. Use a clip-on chuck to inflate tires, with an extension hose long enough to allow you to stand to one side and NOT over or in front of the tire assembly.

Safety (continued)

18. Towing or pushing unit with another vehicle will damage transmission. Push unit by hand only.
19. Use a heavy-duty trailer to transport unit. Lower attachments to trailer bed. Set parking brake. Fasten unit securely to trailer with straps, chains or cables. Unit must be secured to trailer facing forward. Severe damage can occur to hood of unit if it is trailered facing backwards.
20. Use extra care when loading or unloading the machine into a trailer or truck.
21. Do not use food or beverage containers to store waste materials. Using such containers could result in accidental poisoning.
22. **HYDRAULIC COMPONENTS:** BEFORE testing or repairing any hydraulic component, visually inspect for high-pressure leaks. NEVER "feel" for leaks! High-pressure hydraulic leaks can penetrate or burn skin.

ENGINE



1. Read the provided engine operation and maintenance manual completely before operation. Read and follow all safety instructions provided in that manual.
2. **BEFORE SERVICING ENGINE:** Disconnect spark plug wire and keep it from touching spark plug.
3. Keep engine free of grass, leaves, oil and grease.
4. Engine exhaust is extremely hot. Keep grass, oil, fuel and other combustible materials far away from engine exhaust.
5. Do not change engine governor setting. Over-revving may damage engine and will void warranty.
6. Never run an internal combustion engine inside a closed area. Engine exhaust contains carbon monoxide gas, a deadly poison. Carbon monoxide is odorless, colorless and tasteless. Do not operate unit near buildings, windows or air conditioners. If engine is run in a garage, open all doors and allow for adequate ventilation.

BATTERY

1. **BEFORE WORKING WITH ELECTRICAL WIRES OR COMPONENTS:** Disconnect the battery ground (negative) cable first. Disconnect the positive cable second. The battery ground (-) cable must be disconnected first and reconnected last.
2. Before attempting to charge battery, understand and follow correct procedure or bring battery to a factory-authorized dealer for charging. Do not charge a frozen battery.
3. Battery electrolyte can cause severe burns. Eye contact can cause blindness. Always wear approved safety goggles when working around the battery.
4. If electrolyte contacts skin or eyes:
 - a. Flush affected area with water.
 - b. Apply baking soda to neutralize acid.
 - c. Flush eyes with water 10-15 minutes.
 - d. Call a physician immediately.
5. If electrolyte is swallowed:
 - a. Drink large amounts of water or milk.
 - b. Follow by drinking milk of magnesia, beaten eggs or vegetable oil.
 - c. Call a physician immediately.
6. Electric storage batteries give off highly explosive hydrogen gas while charging and continue to do so for some time after receiving a steady charge. Do not, under any circumstances, allow an electric spark or an open flame near the battery. Do not lay tools across the battery terminals as this may result in a spark or a short circuit which may cause an explosion. Use a flashlight to check electrolyte level.

STORAGE

1. Do not store unit inside a building where fumes from fuel in fuel tank may reach an open flame or spark. Allow unit to cool before moving it inside an enclosure. Use a gasoline storage stabilizer when storing unit.
2. Keep unit and fuel supplies securely locked away to help prevent access by children.
3. Remove ignition key.
4. Disconnect battery cables or remove battery if storing unit for an extended period. Remove negative (ground) cable first. Re-connect negative (-) cable last.
5. Fully charge battery before storage. Store battery in a cool, dry place, out of reach of children.

Attachments, Kits & Specifications

Below is a list of attachments and kits available for this tractor. The information below is the most current at the time this manual was printed. Check with your nearest dealer for current information.

Number	Description	Number	Description
14025	42" Side Discharge Mower	1319	Carrier Weights (5 max)
14026	48" Side Discharge Mower	14066	Front End Loader (requires counterbalance)
14030	48" Rear Discharge Mower	14075	Cab (Femco)
14061	60" Side Discharge Mower	18032	Front Wheel Weights
14032	Grass Reduction System (42" and 48" mowers)	30902	Rear Wheel Weights (50 lb.)
14058	Power Packer Plus	16219	Tire Chains (23" Turf)
14070	Cart Grass Collector (use with 14058)	14067	Push Arm Kit
14069	2-Bag Grass Collector (use with 14058)	14074	AGR Wheel and Tire Kit
14065	33" Tiller	1767510	Arm Rest Kit
1767196	8" Hood and Tine Extension (use with 14065)	14068	54" Snow Blade (requires counterbalance)
14071	Sleeve Hitch	1767251	Mechanical Angling Kit
14072	3-Point Hitch	14062	42" Snow Thrower (requires counterbalance)
14073	Weight Carrier	14063	46" Snow Thrower (requires counterbalance)

Specifications

Engine	18 HP Kohler (GTX 18) Model M18QS	Battery Size	280 cc AMPS
	20 HP Kohler (GTX 20) Model M20QS	Speeds	Infinitely variable
Type	2-cylinder, 4-cycle, air cooled, horiz. shaft	Forward	0 - 6.8 mph (GTX 18) 0 - 3.3 mph (GTX 20 Lo) 0 - 9 mph (GTX 20 Hi)
Idle Speed	1600 - 1800 RPM	Reverse	0 - 2.9 mph (GTX 18) 0 - 1.5 (GTX 20 Lo) 0 - 4.3 mph (GTX 20 Hi)
High Speed Idle	3600 RPM	Power to Attachments	Double belt drive from electric clutch with splined shaft and universal joint drive.
Engine Oil	1.5 Qts. (1.7 liter) w/filter - 1.75 Qts. (1.9 liter)	Turning Diameter	69" (175.3 cm) inside rear width 173" (439.4 cm) curb to curb
Bore x Stroke (GTX 18)	3.12 x 2.75 in. (79.4 x 69.8 mm)	Weight	792 lbs. (GTX 18) 830 lbs. (GTX 20)
Bore x Stroke (GTX 20)	3.12 x 3.06 in. (79.4 x 77.7 mm)	Tire Size	16 x 650-8 Front 23 x 10.5-12 Rear
Displacement	42.18 cu. in. (0.691 L) GTX 18 46.98 cu. in. (0.769 L) GTX 20	Hydraulic Control	Single spool (GTX 18) Double spool (GTX 20)
Electric Start	Yes	Wheel Base	49" (124 cm)
Air Cleaner	Dry type with precleaner	Spark Plug Size	14 mm
Fuel Capacity	4.3 Gallons (16.3 L)	Spark Plug Gap025" (0.65 mm)
Transmission	Hydrostatic, Eaton 11		
Transaxle	1-Speed (GTX 18) 2-Speed (GTX 20)		
Attachment/PTO Drive Speed	2000 RPM		

Section 3

Assembly

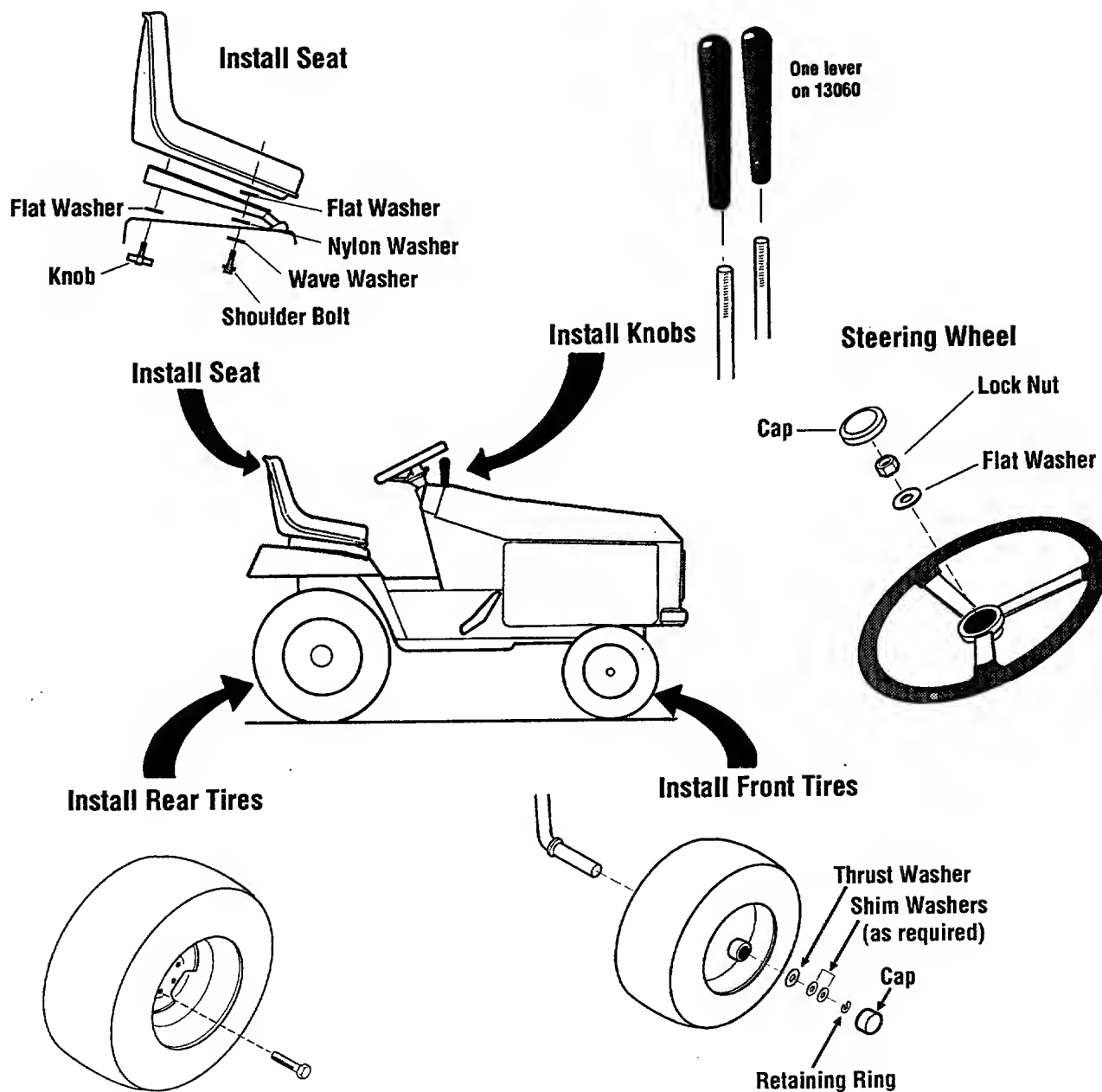


Figure 3-1

Pre-Delivery Set-Up and Assembly Check List.

The following checklist applies to units requiring partial assembly. Follow these instructions prior to delivery and operation. See Figure 3-1.

☐ **Battery**

Activate battery as instructed on page 15.

☐ **Engine Oil**

Add engine oil as necessary. See "Engine Oil", page 20.

☐ **Transmission Oil**

Check level and add oil if necessary. See "Hydrostatic Maintenance and Lubrication", page 24.

☐ **Lubrication Points**

Check all lubrication points. Lubricate as necessary. See section 7 for lubrication instructions.

☐ **Fuel Tank**

Fill fuel tank with a good grade of clean and fresh fuel. Use **UNLEADED GASOLINE** with an octane rating of 87 or higher.



WARNING

DO NOT REMOVE GAS CAP OR REFUEL UNIT WHILE ENGINE IS RUNNING OR HOT. DO NOT ADD FUEL INDOORS. KEEP SMOKING MATERIALS, SPARKS AND FLAMES AWAY FROM GAS TANK AND FUEL CONTAINER. REPLACE GAS CAP BEFORE STARTING ENGINE.

☐ **Front Wheels**

Slide front wheels (Fig. 3-1) onto spindle assemblies on both sides of tractor (valve stem to the inside). Place thrust washer and shim washers (as required to eliminate side play). Secure with retaining ring and cap.

☐ **Rear Wheels**

Secure each rear wheel to tractor with bolts provided (Fig. 3-1).

☐ **Tire Pressure**

Inflate tires to:

Front - 12 - 14 PSI
(82 - 96 kPa)

Rear - 8 - 10 PSI
(55 - 68 kPa)

☐ **Seat**

Locate wiring harness under seat. Connect seat harness to seat interlock switch lead. Secure front half of seat to seat support as shown in Fig. 3-1 with shoulder bolt, wave washer, nylon washer and flat washer.

Secure rear half of seat to seat support with flat washers and knobs.

☐ **Steering Wheel**

Secure steering wheel to steering shaft over woodruff key, with flat washer and locknut. Place cap on wheel.

☐ **Hydraulic Control Knobs**

Install knobs (Fig. 3-1) onto hydraulic control levers.

☐ **Engine Starting**

See page 16 for starting procedure.

☐ **Attachment Installation**

Install attachment as instructed in attachment operator's manual.

☐ **Attachment/PTO drive Break-in Procedure**

Start engine as instructed on page 15 of this manual. Run engine at full throttle (Fast). Engage and disengage the PTO (attachment drive) 10 to 15 times. Do this prior to initial use and after extended storage.

☐ **Test Drive**

Test drive the complete unit (with attachment) for operation.

☐ **Operating Instructions**

Supply owner/operator with this manual and full instructions on safety and operations of this unit. Operator must read and understand this manual.

☐ **Registration**

Fill out and submit owner registration card.

☐ **Literature**

Provide owner/operator with enclosed manuals. Stress importance of reading and understanding them before operating unit.

Section 4

Controls

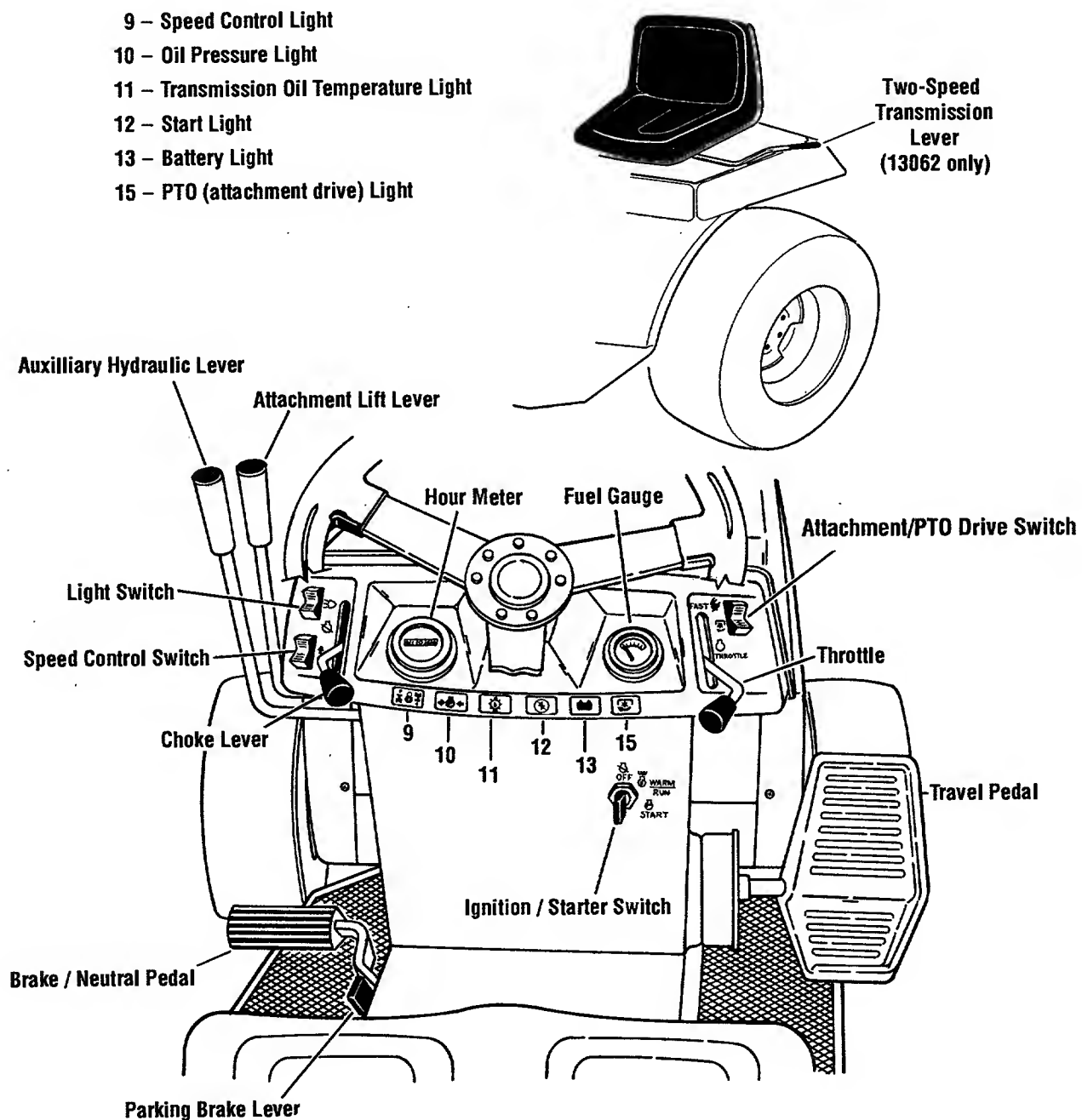


Fig. 4-1

Identification and Function of Controls and Features

Before operation, the operator should become familiar with the function and location of each control. This will help to ensure proper and efficient operation.

1. Brake / Neutral Pedal

Press pedal to apply brake and when starting engine. To lock brake (when parked), press pedal and lift parking lock lever to lock pedal down.

2. Parking Brake Lever

Press pedal and lift parking brake lever to latch pedal in park position.

3. Choke Lever

Move choke lever to "ON" when starting a cold engine. Once engine is started, move it slowly to "OFF".

4. Attachment Lift Lever

Pull lever back to activate hydraulic lift attachment. Push lever forward to lower attachment.

5. Auxiliary Hydraulic Lever (GTX 20)

(For front hydraulic connections only) Pull lever back to activate auxiliary hydraulic lift attachment. Push lever forward to reverse direction.

6. Speed Control Switch

Speed control allows the operator to maintain a constant drive speed without contacting travel pedal. When activated, speed control sets travel pedal at desired position.

7. Light Switch

"OFF" and "ON" positions.

8. Hour Meter

Registers hours of tractor use.

9. Speed Control Light

When lit, speed control is on.

10. Oil Pressure Light

WHEN LIT, STOP ENGINE IMMEDIATELY. When lit, indicates lack of oil pressure in engine. Engine damage may result. Service before re-starting.

11. Transmission Oil Temperature Light (GTX 20)

WHEN LIT, STOP ENGINE IMMEDIATELY. When lit, indicates oil temperature in the transaxle is too hot. If light is on, stop tractor and allow it to cool. Continued use will damage transmission.

12. Start Light

Indicates when ignition switch is in start position and safety start interlock switches are not activated.

13. Battery Light

Indicates low battery voltage.

14. Fuel Gauge

Indicates amount of fuel in tank.

15. Attachment/PTO Drive Light

Indicates when PTO (attachment drive) is activated.

16. Attachment/PTO Drive Switch

Engages and disengages power to attachments. "ON" engages electric clutch, "OFF" disengages.

17. Throttle

Controls engine speed. Operate engine at full throttle ("FAST") when operating attachments.

18. Ignition / Starter Switch

This is a three position switch:

"OFF" Engine off.

"START" Starts engine.
Release when engine starts.

"RUN" After starting, key returns to "RUN".

19. Travel Pedal

Controls forward and rearward movement of tractor. Press pedal at top (with toe) to move forward. Press pedal at bottom (with heel) to move in reverse.

To stop or slow down when moving forward: Press pedal at bottom (with heel).

To stop or slow down when in reverse: Press pedal at top (with toe).

20. Two-Speed Transmission Lever (GTX 20 only)

Lever is located under seat, on left side. Move lever forward for "LOW" range and rearward for "HIGH" range.

Section 5

Before Operation



WARNING

BEFORE OPERATING TRACTOR, READ AND UNDERSTAND ALL SAFETY, CONTROLS AND OPERATING INSTRUCTIONS IN THIS MANUAL AND ATTACHMENT'S MANUAL. READ AND UNDERSTAND ALL SAFETY AND OPERATING INSTRUCTIONS ON DECALS ON TRACTOR AND ATTACHMENTS.

1. Check Engine Oil

Check for proper level of engine oil. Fill crankcase through fill opening (Fig. 5-1). Oil level is indicated by marks on the dipstick, between "F" and "L". *See engine manual for capacities.*

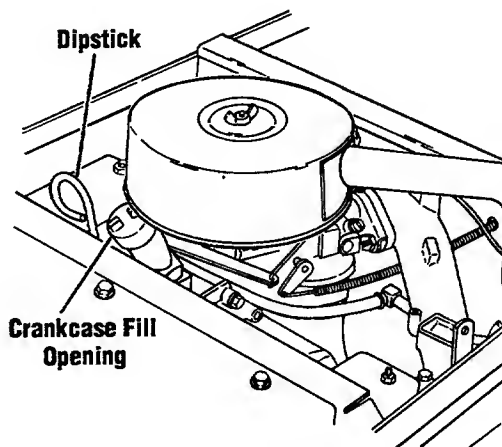


Fig. 5-1



DANGER

DO NOT REFUEL TRACTOR WHILE ENGINE IS RUNNING OR HOT. DO NOT REFUEL INDOORS. KEEP SMOKING MATERIALS, SPARKS AND FLAMES AWAY FROM GAS TANK AND FUEL CONTAINER.

2. Check Gasoline Level

Fill fuel tank with a good grade of clean, unleaded gasoline with an octane rating of 87 or higher. Filler neck is located at rear of tractor. Leave about 2 inches of room at top of filler neck for expansion. **Do not mix oil with gasoline! Make sure vent hole in fuel tank cap is not plugged.**

3. Check Engine Flywheel Screen

STOP ENGINE BEFORE CLEANING FLYWHEEL! Check for debris and clean regularly.

4. Visually Check Hardware

Check for loose or missing screws, nuts and damaged parts. Replace and tighten if necessary.

5. Check Tire Pressure

Front: 12 - 14 PSI (82 - 96 kPa)

Rear: 8 - 10 PSI (55 - 68 kPa)

6. Adjust Seat for Comfort

To adjust, loosen knobs beneath seat and slide seat forward or backward to desired position. Re-tighten knobs.

7. Perform Electric Clutch Break-In Procedure

With engine running at full speed (fast), engage and disengage attachment/PTO drive switch 10 to 15 times. Perform this step before initial use and after extended storage.

DANGER

BATTERIES PRODUCE EXPLOSIVE GASSES. KEEP OPEN FLAMES AND SPARKS AWAY. DO NOT SET TOOLS ACROSS TERMINALS.

BATTERY ELECTROLYTE CAN CAUSE SEVERE BURNS. EYE CONTACT CAN CAUSE BLINDNESS. ALWAYS WEAR EYE PROTECTION AND RUBBER GLOVES WHEN WORKING AROUND BATTERY.

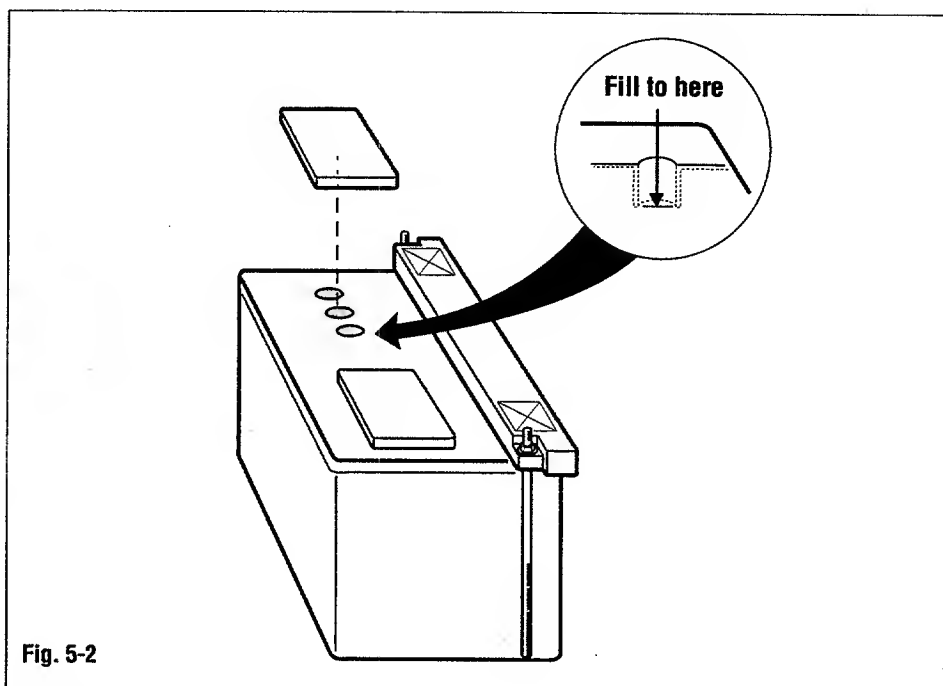
IF ELECTROLYTE CONTACTS SKIN OR EYES, RINSE IMMEDIATELY WITH WATER FOR AT LEAST 15 MINUTES. CALL PHYSICIAN IMMEDIATELY.

RINSE EMPTY ELECTROLYTE PACK WHEN FINISHED WITH LARGE QUANTITIES OF WATER. DESTROY EMPTY ELECTROLYTE PACKAGE TO HELP PREVENT ACCIDENTS.

8. Check Battery

Electrolyte level should be level with bottom edge of cell (Fig. 5-2).

If cables are corroded, clean them.



9. Activate Battery

- Remove battery from tractor.
- Remove battery vent plugs.
- Fill each cell in battery with electrolyte as shown in Fig. 5-2. **DO NOT OVERFILL!** Read and follow instructions provided with electrolyte for proper electrolyte package handling instructions.
- Wait 20 - 30 minutes and recheck electrolyte level. Add additional electrolyte if necessary. **Add only distilled water to replace battery electrolyte loss after battery is activated.**
- Replace battery vent plugs.
- Charge battery at 2 amps for 2 hours.
- Reinstall battery into tractor. Connect positive (+) battery cable to positive (+) battery terminal. Connect negative (-) battery cable to negative (-) battery terminal.

Section 6

Operation

WARNING

BEFORE OPERATION, READ AND UNDERSTAND ALL SAFETY/OPERATING INSTRUCTIONS IN THIS MANUAL AND ATTACHMENT'S MANUAL. READ AND UNDERSTAND ALL SAFETY AND OPERATING INSTRUCTIONS ON DECALS ON TRACTOR AND ATTACHMENTS.

Start Engine

1. Move attachment/PTO drive switch (Fig. 6-1) to "OFF". Starter will not activate unless switch is "OFF".
2. Press brake/neutral pedal in.
3. Move choke lever up (choke on). Move throttle halfway up.
4. Insert ignition key. Turn key to the right to start engine. Release key when engine starts.
5. **In case of false start, allow engine to stop completely before re-starting.**

If engine speeds up enough to disengage starter but fails to continue running – Allow engine to stop completely before engaging starter again.

Limit cranking (continuous) to no more than 10 seconds. If cranked for 10 seconds, allow starter to cool for at least one minute. Over-heating may damage starter.

WARNING

IN CASE OF A FALSE START, ALLOW ENGINE TO STOP COMPLETELY BEFORE RE-STARTING. FAILURE TO COMPLY MAY DAMAGE STARTER.

6. When engine starts, move choke down halfway (half choke). Gradually, move choke down (choke off) as the engine warms up.

NOTE: Do not run engine with choke on for prolonged periods. This will affect engine efficiency.

7. Move throttle up to "FAST". Run engine at full throttle "FAST" for maximum engine efficiency.

Do not drive tractor immediately after start up. Allow engine to run a few minutes. This allows transmission oil to warm up.

Run Engine at Full Throttle

Always operate with engine at full throttle. While operating under heavy load conditions, listen to engine RPM. If engine begins to slow down, do not advance travel pedal. Let up on travel pedal. This will decrease ground speed and increase engine speed.

Stop Engine

1. Move throttle (Fig. 6-1) down to "SLOW". Lock brake/neutral pedal down.
3. Turn attachment/PTO drive switch to "OFF".
4. Idle engine for 30 seconds.
5. Turn ignition switch off. Remove ignition key.

Interlock Switches

Leaving seat while attachment/PTO drive is on or while the brake is off will stop engine.

Test interlock: With engine running, stop tractor on a level surface, raise yourself off seat. Engine should stop. Engage brake and turn attachment/PTO drive to "ON". Raise yourself off seat again. Engine should stop. If engine does not shut off in both instances, do not operate unit. Have interlock repaired.

WARNING

DO NOT OPERATE UNIT IF INTERLOCK DOES NOT FUNCTION PROPERLY.

Attachment/PTO Drive

To engage attachment/PTO drive, turn attachment/PTO drive switch (Fig. 6-1) to "ON".

Hydraulic Lift

Pull hydraulic lift lever (Fig. 6-1) back to lift attachment. Push lever forward to lower attachment. When lever is released, it will return to neutral, except when pushed fully forward to "FLOAT" position.

Auxiliary hydraulic lever (GTX 20): Pull lever back to activate auxiliary hydraulic lift attachment. Push lever forward to reverse direction.

Use "FLOAT" position to allow attachment to follow ground contours.



WARNING

BEFORE USING ATTACHMENT LIFT, MAKE SURE ATTACHMENT IS COMPLETELY HOOKED UP. MOVE ATTACHMENT THROUGH COMPLETE LIFT RANGE SLOWLY TO ENSURE NO INTERFERENCE. ADJUST IF NEEDED.

Hydrostatic Transmission

For maximum performance when using attachments, operate engine at full speed (full throttle). Control ground speed with travel pedal.

The hydrostatic transmission provides an infinite choice of travel speeds. Avoid fast travel speeds when using attachments. Slower speeds work best when performing tasks such as snowthrowing, mowing and tilling.

Warning light (GTX 20): The "Oil Temperature" light activates when hydraulic fluid in transmission is overheated. If light is activated, disengage attachment/PTO drive switch (Fig. 6-1) and shut off tractor engine. Allow transmission to cool down. Make sure cooling fins are clear of debris.

2-Speed models (GTX 20): Change speeds with transmission lever (Fig. 6-1). Tractor must be completely stopped when shifting.

Use "HIGH" range (0-9 mph) for transport and mowing.

Use "LOW" range (0-3.3 mph) for heavy load conditions such as tilling, snowthrowing or plowing.

Travel Pedal

Controls forward and rearward movement. Press travel pedal (Fig. 6-1) at top (with toe) to move forward. Press pedal at bottom (with heel) to move in reverse.

To stop or slow down when moving forward: Press pedal at bottom (with heel).

To stop or slow down when in reverse: Press pedal at top (with toe).

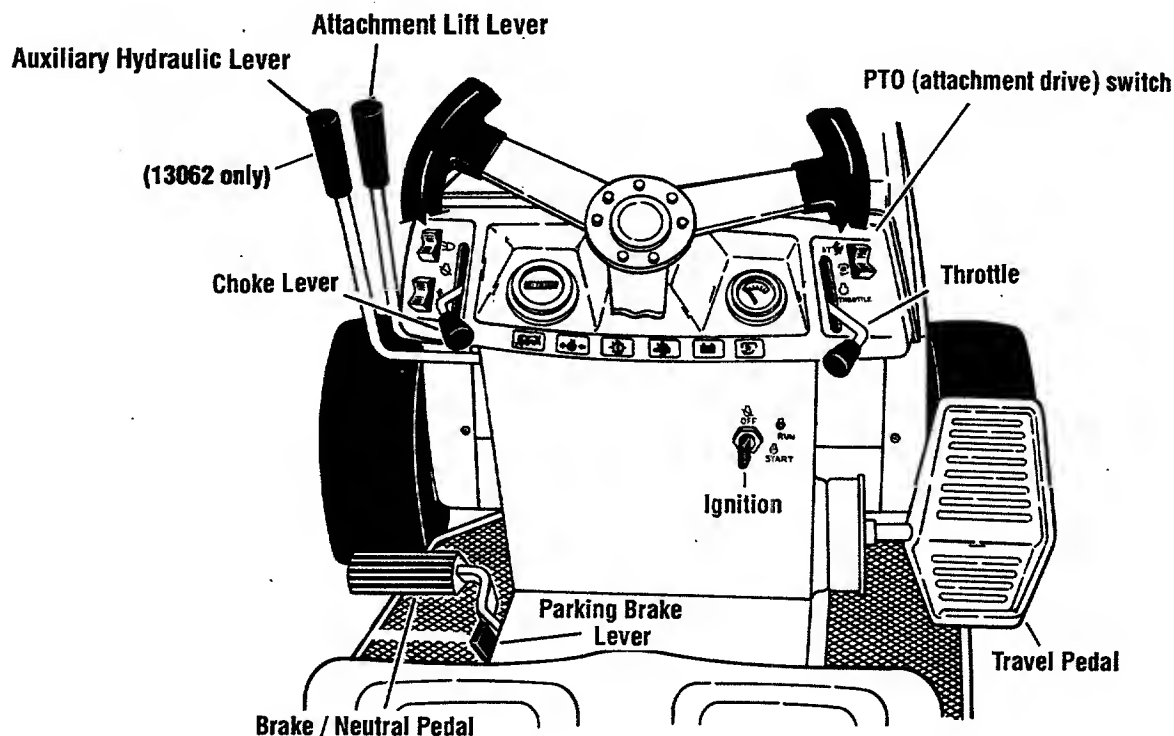


Fig. 6-1

Operation (continued)

Brake / Neutral Pedal

Press brake/neutral pedal (Fig. 6-1) to apply brake and when starting engine. To lock brake (when parked), press pedal and lift parking brake lever to lock pedal down.

Speed Control

Speed control allows operator to maintain a constant drive speed without contacting travel pedal. When activated, speed control sets travel pedal to desired position.

To set: When tractor is moving at desired speed, press "RESET" to activate speed control (Fig. 6-1). This sets travel pedal.

To stop: Press brake pedal or turn speed control switch off.

To reset: To re-activate speed control, press reset.

Power Steering

Power steering is controlled by hydraulic system. No adjustment is necessary.

Auxiliary Hydraulic Connections (Model GTX 20)

Connections for auxiliary hydraulics are on front, right-side of frame.

To use, clean all dirt and debris from around connections. Push lock collar (Fig. 6-3) back. Remove rubber plugs. Insert hydraulic hose end.

When auxiliary connections are not in use, keep rubber caps in place to prevent debris from entering hydraulic system.

KEEP HYDRAULIC CONNECTIONS CLEAN.

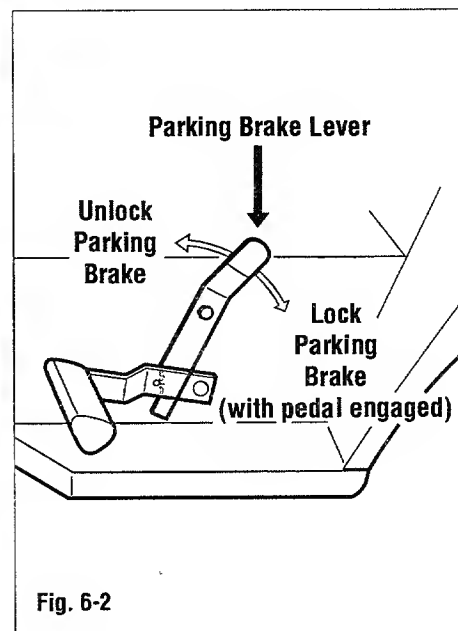
Dirty hydraulic connections can contaminate hydraulic fluid and damage hydraulic components.

WARNING

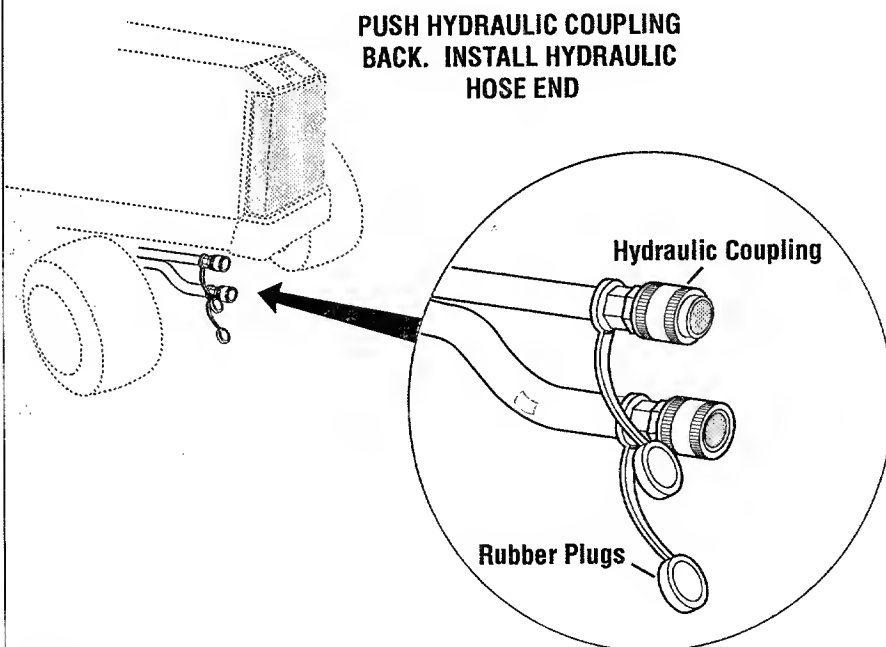
DIRTY HYDRAULIC CONNECTIONS CAN CONTAMINATE THE HYDRAULIC FLUID AND DAMAGE HYDRAULIC COMPONENTS. KEEP RUBBER PLUGS IN PLACE.

WARNING

HIGH PRESSURE HYDRAULIC OIL LEAKS COULD PENETRATE SKIN. NEVER FEEL FOR LEAKS.



Auxiliary Hydraulic Connections



USE ONLY TROY-BILT APPROVED ATTACHMENTS. Attachments manufactured by others could damage hydraulic system and void warranty.

INSPECT ALL HYDRAULIC COMPONENTS FOR HIGH PRESSURE LEAKS BEFORE TESTING OR REPAIRING. Never "feel" for leaks. High pressure oil leaks could penetrate skin. Operating temperatures of hydraulics are extremely high.

Moving Tractor Manually

DO NOT TOW OR PUSH TRACTOR WITH ANOTHER VEHICLE. DOING SO MAY DAMAGE TRACTOR DRIVE SYSTEM.

Push tractor slowly to prevent temporary lock-up of rear wheels.

Model GTX 20: Shift transmission lever (Fig. 6-4) to neutral.

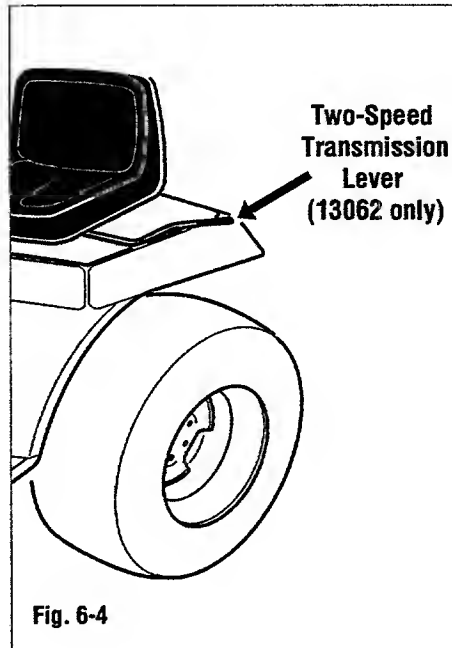


Fig. 6-4

Lubrication and Maintenance

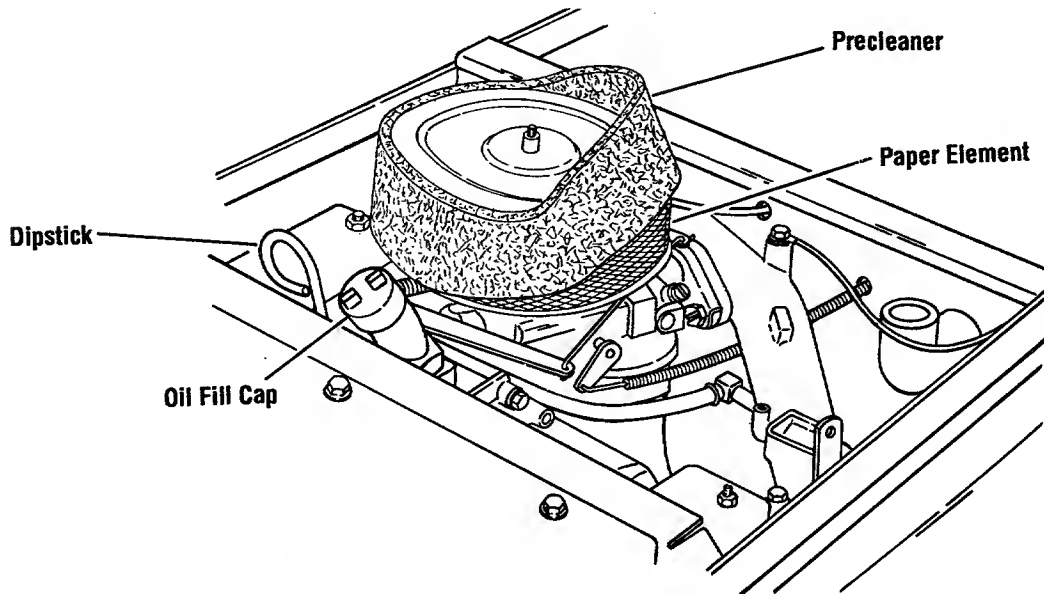


Fig. 7-1



WARNING

BEFORE PERFORMING ANY MAINTENANCE OR ADJUSTMENTS TO TRACTOR, ENGINE OR ATTACHMENTS: LOWER ATTACHMENTS TO GROUND, DISENGAGE ATTACHMENT/PTO DRIVE, SHUT OFF ENGINE AND WAIT FOR ALL MOVING PARTS TO STOP. SET PARKING BRAKE AND ALLOW ENGINE AND MUFFLER TO COOL.

Preventive maintenance results in longer operating life and better performance.

Engine Oil

Engine oil level must be within safe range on dipstick at all times. Check before use.

Your engine may vary from these instructions. See engine manual for complete engine information and oil specifications.

To check oil level:

1. Clean area around dipstick (Fig. 7-1) so dirt does not fall into crankcase when dipstick is removed.
2. Remove dipstick. Oil level must be between the "L" and "F" marks on the dipstick. **DO NOT OVERFILL.** Oil level must not exceed the "F" mark on the dipstick.

New engine: Change the oil after the first 5 hours of use, then change oil regularly as specified on the lubrication chart.

Add oil: Remove the oil fill cap (Fig. 7-1) and add oil.

Change oil: Change oil as specified on lubrication chart. Drain oil while it is hot. Hot oil flows more freely and carries away more impurities.

1. Remove drain plug. (Locate drain plug under tractor, beneath engine.) Drain oil completely.
2. Re-install drain plug. Remove oil fill cap.

3. Re-fill with oil. See Oil Specifications chart for correct oil type. Fill to level between "L" and "F" marks on dipstick.

Your engine may vary from these instructions. See engine manual for complete engine information and oil specifications.

Air Screen

STOP ENGINE BEFORE CLEANING FLYWHEEL! Check for debris and clean regularly.

A dirty air screen and engine can cause engine to overheat.

Air Cleaner

IMPROPER AIR CLEANER MAINTENANCE CAN CAUSE ENGINE DAMAGE.

Your engine may vary from these instructions. See engine manual for complete engine information.

Disassembly: Clean off dirt from around air cleaner. Remove cover. Remove precleaner (Fig. 7-1) and paper element.

Precleaner: (Fig. 7-2) Service precleaner every 25 hours of operation (more often under dusty or dirty conditions).

Service precleaner:

1. Slide foam pre-cleaner off paper cartridge.
2. Wash foam pre-cleaner in liquid detergent and water.
3. Rinse foam pre-cleaner and wrap in cloth. Squeeze dry. Do not wring.
4. Saturate foam pre-cleaner in clean engine oil. Squeeze to distribute and remove excess oil.
5. Install foam pre-cleaner over paper cartridge. Install cover and screw down tightly.

Paper element: (Fig. 7-1) Under normal conditions, disassemble and service paper element every 100 hours of operation.

Do not use petroleum solvents, oil or pressurized air to clean paper element. Do not allow dirt to fall into the engine. Replace paper element when no longer serviceable with a Kohler element only.

Service paper element:

1. Remove paper element.
2. Wipe dirt or dust from air cleaner cover, including base plate.
3. Clean element by gently tapping it on a flat surface. Be careful. Do not damage gasket surfaces on element.

Fuel Filter

Your engine may vary, see engine manual.

The fuel filter (Fig. 7-2) is mounted along fuel line, originating at fuel tank. This filter is disposable. Replace when dirty. See maintenance chart for changing intervals.

To replace filter, shut off in-line valve under fuel tank. Remove filter from fuel line. Replace with part number 1727491. Open valve after replacement.

Carburetor

The carburetor is adjusted at the factory. It shouldn't need resetting. If black exhaust is noted, check air cleaner. An over-rich mixture is usually caused by a poorly serviced or clogged air cleaner element, not an improperly adjusted carburetor.

Battery

Keep cables and terminals clean. If cables are corroded, clean them.



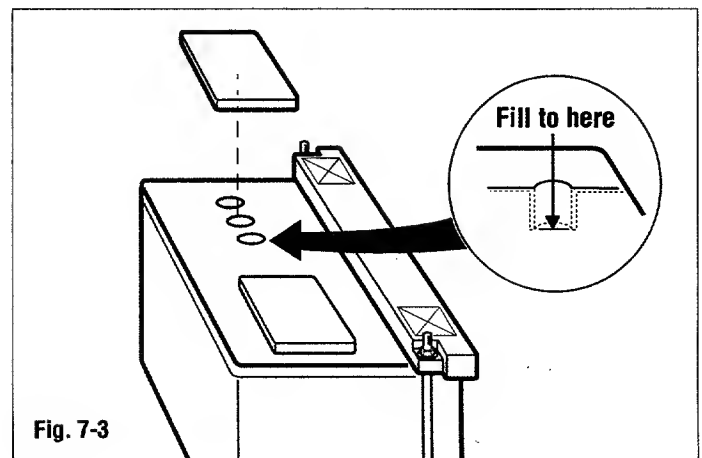
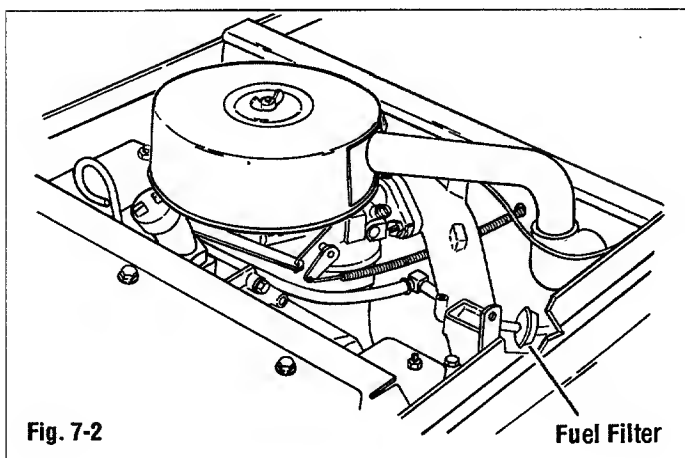
WARNING

BATTERIES CONTAIN EXPLOSIVE GASSES. KEEP OPEN FLAMES AND SPARKS AWAY. DO NOT SET TOOLS ACROSS BATTERY TERMINALS. AVOID CONTACT WITH ELECTROLYTE. ELECTROLYTE CAN CAUSE SEVERE BURNS AND BLINDNESS.

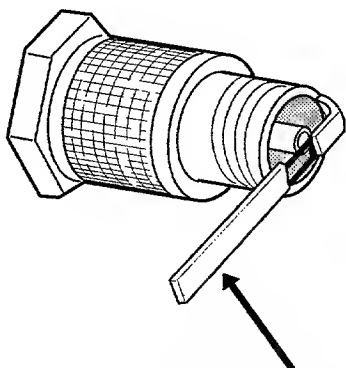
After cleaning, apply a light coat of petroleum jelly or grease to terminals and over the bolt stud. **ALWAYS CONNECT NEGATIVE (-) TERMINAL LAST.**

Electrolyte should be level with bottom edge of cell. See Fig. 6-3. **FILL WITH DISTILLED WATER ONLY.**

Remove battery cables before removing battery. Remove negative (-) cable first, followed by the positive (+) cable. Always check the polarity of the battery terminals. Make sure the battery is not reversed. Negative (-) cable is the ground.



Maintenance (continued)



.025" (0.65 mm) Feeler Gauge

Fig. 7-5

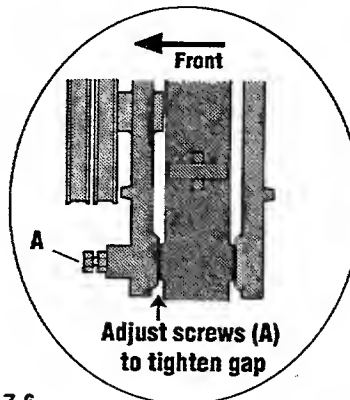


Fig. 7-6

WARNING

BEFORE PERFORMING ANY MAINTENANCE OR ADJUSTMENTS TO TRACTOR, ENGINE OR ATTACHMENTS: DISENGAGE ATTACHMENT/PTO DRIVE, SHUT OFF ENGINE AND WAIT FOR ALL MOVING PARTS TO STOP. SET PARKING BRAKE AND ALLOW ENGINE AND MUFFLER TO COOL.

Spark Plugs

Every 100 hours, remove plugs and check condition. Reset gap (Fig. 7-5) at .025" (0.65 mm). Do not service a plug in poor condition. Best results are obtained with a new plug.

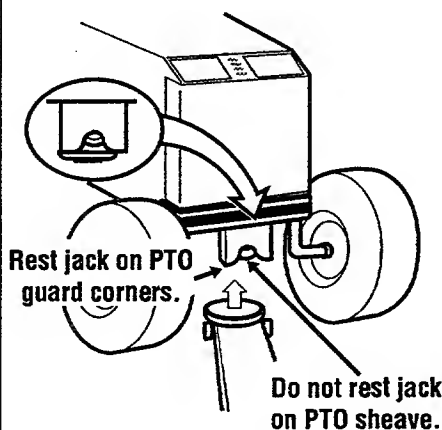
Under good operating conditions, the plug will have a light gray coating or a tan deposit. A dead white, blistered coating could indicate overheating. A black (carbon) coating could indicate an over-rich fuel mixture caused by clogged air cleaner or improper carburetor adjustment.

NOTE: Do not clean spark plugs in machines which use abrasive grit. Clean spark plugs by scraping, wire brushing or washing with commercial solvent.

Proper Jack Placement

A floor jack (not a bottle jack) or an overhead hoist may be used to lift front of tractor. Do not attempt to use any other device to lift tractor.

Securely chock rear wheels. Rest jack on PTO guard corners. See below. Do not rest jack on PTO sheave.



WARNING

USE EXTREME CARE WHEN JACKING OR HOISTING TRACTOR. BLOCK WHEELS AND USE JACKSTANDS TO SECURELY HOLD UNIT IN PLACE.

Front Axle Adjustment

In time, a gap may form in front axle in front of screw (A, Fig. 7-6). An adjustment is provided. This adjustment can reduce play in axle.

To make front axle adjustment:

1. Set parking brake. Securely block rear wheels. Raise front of tractor.
2. Adjust screws (A, Fig. 7-6). These screws apply pressure to front axle. Axle should pivot with a small amount of drag.

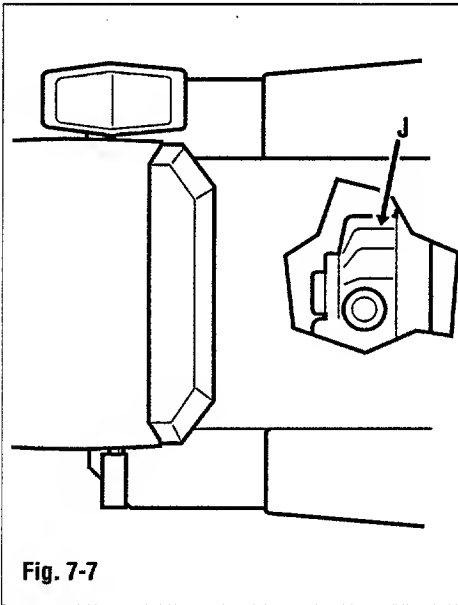


Fig. 7-7

Front Wheel Alignment

Straighten front wheels. Loosen locknuts (B, Fig. 7-6). Adjust tie rod (C) so measurement (M) is 1/8" longer than measurement (N).

Interlock Switches

This unit is equipped with four interlock safety switches to help ensure a safe start-up. To test interlock, see page 16.

Attachment/PTO drive switch: One interlock is incorporated into the PTO switch. This switch must be off to start engine.

Seat: An interlock is positioned inside seat. If operator leaves seat without locking brake/neutral pedal and turning off PTO switch, engine will stop.

Brake/Neutral linkage (ignition): Brake/neutral pedal must be pressed to start engine.

Brake/Neutral linkage (speed control): When brake/neutral pedal is pressed, circuit for speed control switch is open. All power to speed control is shut off.

Brake Adjustment

Adjustment is required if:

1. Only light foot pressure latches parking lock lever.
2. Brake/neutral pedal does not hold tractor when pedal is latched.

To adjust:

1. Tighten brake mounting screws (S, Fig. 7-8) until a slight drag can be felt when disk (T) is rotated (by pushing tractor forward slightly).
2. Move brake pedal to disengaged (released) position. Move and hold brake arm (U) to full-forward position.
3. To adjust yoke assembly (V), remove clevis (W). Turn yoke assembly to align hole in yoke with bottom hole in brake arm.
4. Back yoke assembly off an additional four full turns (counterclockwise). Insert clevis (W) into yoke assembly and brake arm.
5. Press and release brake several times. Re-check and re-adjust as necessary.

Hydrostatic Maintenance and Lubrication

Perform the following procedure every 25 hours of operation.

1. Remove all dirt from around transmission filler area. Clean transmission cooling fins (J, Fig. 7-7, page 23). If tractor is operated in a dusty environment, check and clean cooling fins more frequently.

(continued on page 24)

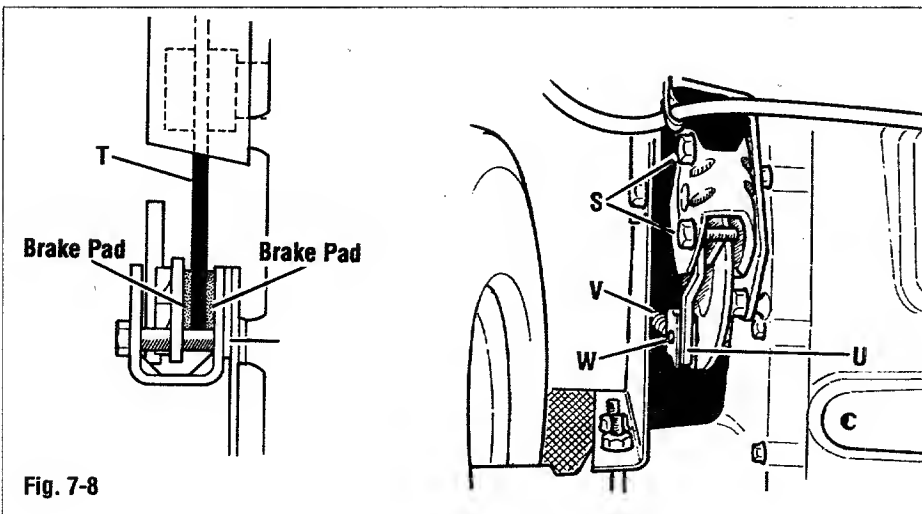


Fig. 7-8

Maintenance (continued)

Hydrostatic Maintenance and Lubrication (continued)

3. When transmission is cold, check fluid level in transmission. Fill to the level indicated on dipstick, located beneath seat.

Transmission Oil Filter: Replace transmission oil filter every 100 hours. Filter is located under tractor, in front of transmission. See parts catalog for part number and part ordering information.

For more detailed hydrostatic maintenance information, a separate repair manual is available from your dealer.

Travel Pedal Adjustment

The travel pedal was adjusted at the factory with tip (of pedal) approximately 45° forward of vertical center line. This angle can be adjusted for comfort:

1. Loosen hex nuts (A, Fig. 7-9).
2. Adjust hex nuts until desired angle is reached.
3. Retighten nuts (A) against rod end (L).

Hydrostatic Neutral Adjustment

Hydrostatic neutral is adjusted at factory. If tractor creeps forward or backward while hydrostatic pedal is in neutral position, adjust as follows:

1. Securely block up rear of tractor so rear wheels clear ground.



WARNING

USE EXTREME CARE WHEN JACKING OR HOISTING TRACTOR. BLOCK WHEELS AND USE JACKSTANDS TO SECURELY HOLD UNIT IN PLACE.

2. Remove tractor chassis tunnel (B, Fig. 7-9) by removing the four screws indicated.
3. Start engine and release brake.
4. Loosen capscrews (C). Move support plate (D) forward if wheel rotates in a forward direction or move support plate toward the rear if it rotates in reverse.
5. Tighten capscrews (C) when wheels no longer rotate.

6. Stop engine and lock brake arm against stop (E).
7. Loosen jam nuts (F) and turn rod (G) until pin enters slot (H) of neutral plate. Adjust until there is a gap of 1/32" between end of slot and pin.



CAUTION

INCORRECT ADJUSTMENT MAY DAMAGE PIN.

8. Tighten jam nuts (F).
9. Re-install chassis tunnel (B). Secure with screws removed earlier.

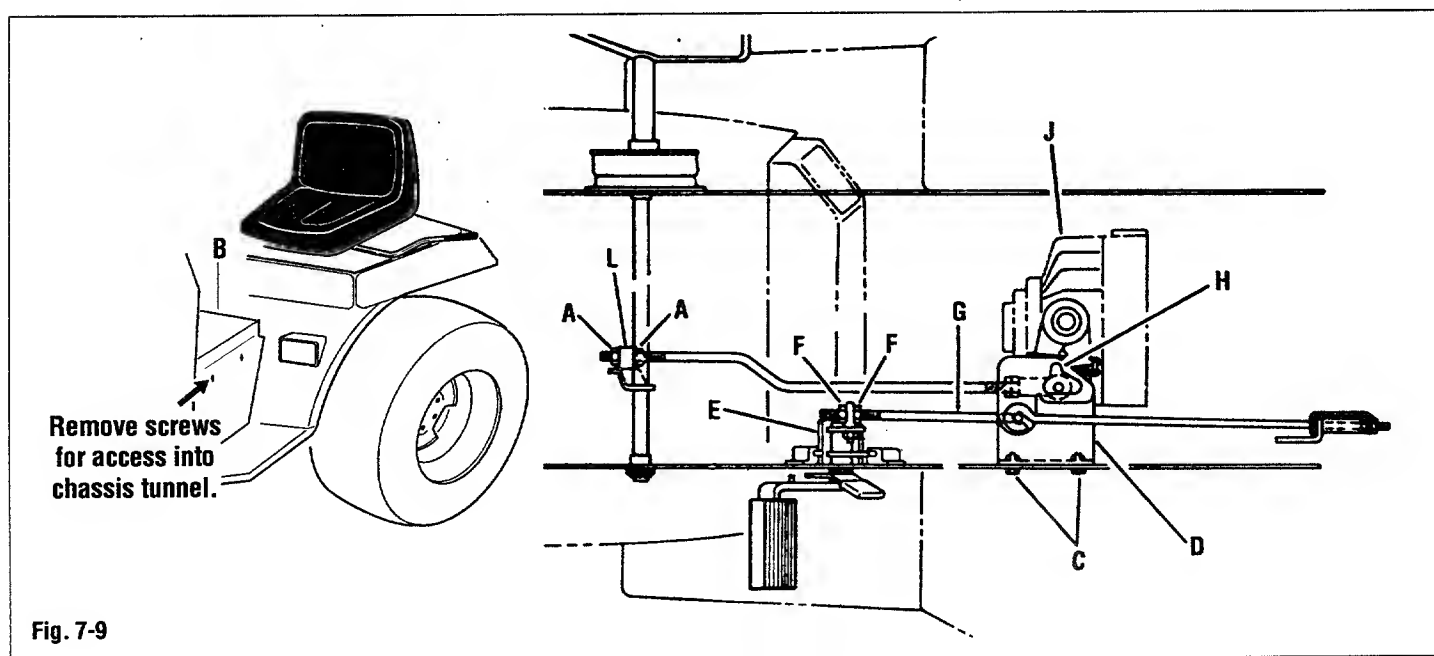


Fig. 7-9

Maintenance Chart

INTERVAL	ITEM	SERVICE
Daily	Transmission Oil Battery Fluid Engine Air Intake Screen Engine Oil Level	Check Check As Required Check Check
First 5 hours	Engine Oil and Filter Transmission Oil Filter	Replace Replace
Every 25 hours	Air Filter Pre-cleaner Transmission Cooling Fins Tires Brake	Clean Clean Check for wear and air pressure Check for wear and adjustment
Every 50 hours	Engine Oil Engine Oil filter Engine Cooling Fins	Change Change Clean
Every 100 hours	Air Filter Element Transmission Oil Filter Fuel Filter Spark Plug Transmission Oil	Replace Replace Change Replace, clean, reset gap Replace

Lubrication Chart

Item	Frequency	Type of Lubrication	Amount Required
Engine Crankcase	First 5 hours	See oil recommendations chart	Without filter 1.5 qts (1.4 L) With filter add additional 1/2 pt. (0.24 L)
	25 hours & 50 hours	Lubrication intervals vary with operating conditions and type of oil used	
Hydrostatic Transmission	Check Weekly or 30 hours. Change when oil is dis- colored, dirty or after 100 hours	Oil - Part No. 1738157 (Benzol Gear Hydro Oil) Alternate Oils - Mobil 423, Amoco 1000 or Texaco TDH	Fill to within safety operating zone
Front Wheel Spindles	25 hours or end of season	Multi-purpose grease	As required
Front Axle Pivot	25 hours or end of season	Multi-purpose grease	As required

NOTE: A hand type grease gun is recommended when greasing your unit. High pressure type grease guns could cause damage to the fittings and bearing seals. Lubricate all linkages, levers and pins not equipped with grease fittings, with an oil can once each week. More often depending on operating conditions.

Storage

Storing the Tractor

Always store tractor in a dry and protected place when not in use to protect it from the elements. When tractor is used year round, it is not necessary to store tractor. If tractor will not be used for a season, store it in the following manner.

☐ **Cleaning**

Completely clean all accumulated dirt or grass from all parts – especially engine fins, hydrostatic fins and flywheel screen.

☐ **Protecting Finish**

Wipe oil or a rust preventative on any parts which may rust. Touch up any area where paint has been chipped or worn off on the tractor.

☐ **Gas Tank**

Drain gas tank and carburetor.

☐ **Changing Oil**

Change engine oil while engine is still hot (see "Engine Oil", page 20).

☐ **Fuel Filter and Air Cleaner**

Check fuel filter and air cleaner. Replace if dirty or damaged. (See "Air Cleaner", page 20).

☐ **Spark Plug**

Remove, clean and re-gap spark plug. Place a small amount of oil (SAE 30) into cylinder. Turn engine over a few times to fully lubricate the cylinder walls, valve seats and valve stems. This can be performed by engaging the key starter briefly. Replace spark plug. (See "Spark Plugs", page 22).

☐ **Battery**

Check battery. Keep terminal posts cleaned of corrosion salts. Coat terminal posts with petroleum jelly or grease. Keep cables clean. A stored battery must be kept fully charged with all cells filled. Store at a cool temperature – 20° F to 50° F. Check every two months and charge as necessary.

☐ **Lowering Attachment**

If tractor is stored with an attachment mounted on it, lower the attachment to the ground. Turn PTO/attachment drive switch to "OFF".

☐ **Protecting from Elements**

During the winter, store the tractor inside a building. If this is not possible, protect the tractor from snow and ice with a waterproof tarp or cover.

☐ **PTO Clutch**

After storage, operate the PTO clutch 10 to 15 times, at idle, before operation.

Troubleshooting Chart

Possible Cause / Solution

Problem	Refer to engine manual.	Check attachment drive switch.	Check cruise relay, interlock and cruise switch.	Clean off engine fins.	Clean flywheel screen.	Faulty Ignition.	Faulty spark plug.	Empty fuel tank.	Check Battery or start solenoid.	Check Carburetor.	Check Oil.	Clean aircleaner.	Adjust choke.	Check engine cooling fins.	Check interlock switches at brake.	See your dealer.
Engine turns over but won't start.	✓					✓	✓	✓		✓			✓			✓
Engine will not turn over.	✓								✓							✓
Engine doesn't turn over but start light comes on.		✓													✓	
Starts only after repeated tries.	✓					✓	✓			✓			✓			✓
Stalls in a few seconds.	✓							✓		✓						✓
Stalls when hot.	✓			✓	✓	✓	✓	✓		✓	✓	✓				
Idles rough.	✓						✓	✓		✓			✓			✓
Engine overheats.	✓			✓	✓	✓				✓	✓	✓		✓		✓
Attachment drive inoperative.		✓														
Cruise control Inoperative.			✓													

LIMITED WARRANTY

Products Covered This warranty is for the following TROY-BILT® branded products and their attachments or accessories: chipper/shredders, chipper/vacs, walk-behind mowers, riding mowers, tractors, snow throwers, brush-cutters, sprayers, carts, composters and the Mini-Tiller.

Date Warranty Begins The warranty begins on the date of purchase.

What is Covered This product (except for the engine, as explained below) is warranted by Garden Way Incorporated to the original purchaser only, to be free of defects in material and workmanship under normal use and service for the following time periods:

NON-COMMERCIAL RESIDENTIAL USE.....7 Years

COMMERCIAL OR OTHER NON-RESIDENTIAL USE.....90 Days

ENGINES: Engines used for non-commercial residential purposes are covered by the engine manufacturer's separate Limited Warranty. Garden Way Incorporated does, however, extend the length of the engine manufacturer's limited warranty, providing you with coverage for a total of 3 years. Please refer to the separate engine owner's manual for details concerning the engine manufacturer's Limited Warranty.

Engines used for commercial or other non-residential purposes are warranted by their respective manufacturer for the time periods indicated in the Limited Warranty printed in the separate engine manufacturer's owner's manual.

What Is Not Covered

1. This warranty does not cover the periodic, normal replacement of parts that wear out such as belts, seals, blades, batteries, etc.
2. This warranty does not cover damage, malfunctions or failures due to:
 - a) Use of unauthorized accessories or attachments.
 - b) Misuse, accidents, or a lack of reasonable and necessary maintenance as specified in your product's Owner/Operator Manual (you may wish to keep records of maintenance and service).

What We Will Do For You We will, at our option, repair or replace any part found to be defective in material or workmanship, without charge for parts and labor. However, charges for pick-up, delivery, and service calls are not covered by this warranty.

How to Obtain Non-Engine Related Warranty Service

- You may be required to provide proof of the date of purchase (your sales receipt, for example).
- Contact any TROY-BILT® Authorized Service Dealer (if purchased from a dealer, we recommend that you contact the same dealer you purchased this product from in order to give the dealer the opportunity to service you to your satisfaction). Refer to your local telephone directory for the name of your nearest dealer or call the TROY-BILT® Technical Service Department (see Toll-Free number below) for assistance.

-OR-

- Contact the TROY-BILT® Technical Service Department in Troy, N.Y. at this Toll-Free number: **1-800-833-6990**.

How to Obtain Engine Warranty Service Contact any service dealer that is authorized by the manufacturer of your engine. Please refer to the engine manufacturer's Limited Warranty for exact details on how to obtain warranty service. If you have any questions or concerns regarding engine warranty service, please call the TROY-BILT® Technical Service Department for assistance.

Disclaimer of Consequential Damages Garden Way Incorporated shall not be liable under any circumstances for any incidental or consequential damages or expense of any kind, including but not limited to cost of equipment rental, loss of profits, or cost of hiring services to perform tasks normally performed by the equipment.

Limitation of Implied Warranties Any implied warranties, including without limitation any implied warranty of merchantability or fitness for a particular purpose, shall be limited in duration to a period of seven years (90 days if product is purchased for commercial or other non-residential use) from the date of sale.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS. THEREFORE, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Garden Way Incorporated, 102nd St. & 9th Avenue, Troy, New York 12180

GARDEN WAY, INCORPORATED
215 South Park Street, Port Washington, Wisconsin 53074